The SKIMMER

News of the Delaware National Estuarine Research Reserve

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The Delaware National Estuarine Research Reserve (DNERR) is one of 25 designated reserves across the country. The program is a federal-state partnership whose goal is to establish, protect and manage natural estuarine habitats for research and education. Delaware's Reserve consists of two components, the St. Jones River and Blackbird Creek. These sites include both brackish and fresh water estuaries and represent the diverse estuarine ecosystems found throughout the Mid-Atlantic.

INSIDE

MESSAGE FROM THE RESERVE MANAGER

CONSERVATION PRACTICES: ONE SIZE DOES NOT FIT ALL

It is very common for someone who wants to install conservation practices on their property to get bombarded with dozens of choices. There is a large spectrum of projects to choose from. They include meadows, ponds, wetlands, and forest to name a few. All of these have very different management requirements as well as aesthetic values. Site selection is the primary determining factor, but personal taste plays a large role. A field of wildflowers may be preferred to trees and shrubs or a clean pond may be preferred to one with woody debris. The DNERR decided that a demonstration area was needed to highlight the most common conservation practices. This area would give land managers the opportunity too see these projects "on the ground" so they know what to expect and can make sound management choices.

The DNERR has partnered with the Kent County Soil Conservation District, Natural Resource Conservation Service, Ducks Unlimited, Richard Wilson and DNREC to construct the "Alvin Wilson Conservation Demonstration Area". Work started in mid-October on a 12 acre parcel within the St. Jones Component of DNERR. Ponds and wetlands have been installed as well as warm and cool season grass plots. In the spring trees will be planted. By fall of 2004, the site will be ready to host its first field day. The day's events will showcase the first year's progress and discuss project selection and management options with land managers. Wes Conley, the Reserve Conservationist has been in charge of the project. Stay tuned for future updates on how the project is developing.

Mark P. Del Vecchio

ALVIN WILSON CONSERVATION DEMONSTRATION AREA

This past October the St. Jones Reserve completed the first phase of converting twelve acres of poorly drained farm land into demonstration plots for wetlands and grass conservation sites. The project will give anyone interested in wetland creation or grass plantings for wildlife habitat or filter strips, a place to see what they are getting into before implementing the project.

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Conservation Pond

ECSC Expands Research Efforts at DNERR

The Environmental Cooperative Science Center (ECSC) is a consortium consisting of Florida A&M University, Delaware State University, Jackson State University, Morgan State University, South Carolina State University, the University of Miami, Creighton University, and the University of Nebraska, all supported by a grant from the National Oceanic and Atmospheric Administration (NOAA). Six of the eight institutions are paired with a National Estuarine Research Reserve (NERR) or Marine Sanctuary (MS) in order to form partnerships to address important issues in coastal resource management.

During the last two years, the ECSC has run local workshops at each of its NERR locations in order to design integrated social/scientific conceptual models for use in environmental assessment, research planning, and resource management. Delaware State University is paired with Delaware National Estuarine Research Reserve in this effort, and the first draft of the four-component conceptual model for the St. Jones River watershed has been completed (it is available on-line at http://cars.desu.edu/faculty/mreiter/dnerr.htm). The model identified some important drivers, stressors, services, and feedbacks in the St. Jones River watershed, and is being used to guide further scientific research within the watershed by scientists and students at DSU and DNERR. Present research includes the taxonomy of marsh grasses, population studies of key species such as horseshoe crabs and sea birds, flow and sedimentation studies, nutrient enrichment research, and similar topics. Further interaction between DSU and DNERR involving on-site courses, classroom and capstone projects, personnel and expertise exchanges, and plans to combine ECSC outreach activities with the DNERR Coastal Training Program are also underway as a part of the ECSC program.

Mouth of the St. Jones River

Dr. Michael Reiter (the DSU ECSC PI), Dr. Robert Scarborough (DNERR Research Director), and the DSU ECSC research team are presently beginning the planning phase for a remote sensing flyover of the St. Jones Watershed next July. The hyperspectral aerial remote sensing mission, already performed for ACE Basin SC, Apalachicola Bay FL, and Grand Bay MS, is an important research component within the ECSC. Presently, the planned research projects include an analysis of land use patterns in the entire watershed, detection and quantification of phytoplankton chlorophyll and total suspended matter in the watershed, and discrimination of principal vegetation species in marsh transects (particularly invasive species). The flyover will also provide a data-rich, watershed-wide hyperspectral image that can also serve as a baseline map for future remote sensing studies by the ECSC and others (the ECSC plans to fly this site every two to three years), as well as provide comparison data for other nutrient loading or eutrophication monitoring missions. Overall, the ECSC research activities in the St. Jones River watershed will provide local and state resource managers with new tools and approaches to analyze coastal ecosystem integrity and sustainability, and to help determine management practices and planning options for improving water quality in the watershed. For further information on any of these activities, contact Dr. Michael Reiter (mreiter@desu.edu) or Dr. Robert Scarborough (bob.scarborough@state.de.us).

Dr. Mike Reiter, Professor, Delaware State University

Come Aboard: Volunteer at the Reserve!

Are you ready to start a new activity and break away from your routine? Would you like to receive free job training and discover new skills, while benefiting your community? Put your interests and special talents to work. Check out our new Volunteer program.

My name is Cameron Haughey, and I take great pleasure introducing myself and writing to you for the first time as Volunteer Coordinator of the Reserve. I would like to work with you in a collaborative effort to provide DNERR's unique environment with as many resources as possible. Together, we will build a strong volunteer support system to augment the Reserve's enduring goals to provide resource protection and conservation, estuarine research, and environmental education.

The volunteer program has gained a great deal of momentum since it's launch in September. Recently, two environmental education associates have been trained to teach visiting school children about the importance of preserving the estuarine ecosystem. Volunteer groups have established a number of beautification and maintenance projects to provide an even more enjoyable facility for you and our visitors.

Add to the momentum, there are year-round opportunities, both long and short term, which need the help of people just like you.

Involved in a group, a program, or a corporation that requires community service? I will accommodate all the requirements you need to meet and make sure you or your group's schedule, skills, and interests are met.

I encourage you to consider volunteering with the DNERR and visit our website at www.dnrec.state.de.us/DNREC2000/Divisions/Soil/DNERR to learn more about available volunteer opportunities. Please do not hesitate to call or email me at Cameron.Haughey@state.de.us to see how you can become involved. Come aboard and join a growing volunteer team at the Reserve. It's time well

Cameron Haughey

Page from the Naturalist Notebook

The river otter, found in the United States and Canadian waterways, is a sub-species of the Otter (Lutrinae) which belongs to the martens (Mustelidae) family. These expert swimmers have recently been seen at the Blackbird Reserve and are occasion visitors at the St. Jones Reserve. The otters are three to four feet long with a 1-1 ½ foot tail and weigh between 15-25 pounds. They live about 15 years in the wild but as long as 25 years in captivity. The coat ranges from nearly black to reddish or grayish brown on the back. The underbelly may be silvery or grayish brown and the throat and cheeks are silvery to yellowish gray. The fur feels like velvet when stroked and is the most durable North American fur that has been in great demand since the Europeans arrived.

River otters are best known as expert divers and swimmers. They swim at an average speed of seven miles per hour and can stay underwater up to two minutes. The nose is diamond shaped and has two nostrils at the bottom. Otters communicate with their noses, mainly by smelling nearby marked territories. Both the ears and nose have a valve like skin that closes to keep the otter watertight when underwater. Barely making a ripple or splash, unlike beavers, they are easily identified when gliding through the water.

River otters use a variety of habitats. These sleek, furry, aquatic mammals live in rivers, lakes, ponds, and marshes. The webbed and

CONTINUED ON PAGE 4

es·tu·ar·y (ĕs'choo-ĕr'ē) n., pl. es·tu·ar·ies. 1. The part of the wide lower course of a river where its current is met by the tides. 2. An arm of the SEA that extends inland to meet the mouth of a river.

Page from the Naturalist Notebook, con't.

clawed feet are good for running and swimming. An otter can run up to 18mph. As they run and slide they may glide as far as 25 feet on the ice where they tumble into a snow bank or the water. Otters live in dens where they can burrow from the nearby beavers and muskrats. The dens have an opening above water in the summer but they are closed during winter and the only opening is underwater. The entrance opens into a large chamber covered slightly with leaves and grass. Otters are carnivores (meat eaters) with a diet that consists of crustaceans, especially crayfish, slow swimming fish, amphibians, insects, small mammals and even birds. However, the diet consists mostly of fish. The sensitive facial whiskers and the keen sense of touch help the otter detect and catch the underwater target. Otters are active year round and hunt mostly from early evening to early morning. Typically, they hunt by diving and chasing fish or by digging in the bottoms of streams and ponds. An otter litter size varies from one to six with two to three being the most common. They reach sexual maturity when they are two years old and breed in March and April with birth in late winter or early spring. The young are called kits and they are helpless at birth. The eyes do not open until they are least three weeks old. The male otter rarely helps raise the young. It is the female that teaches them to swim and how to catch their prey. The baby otters grow quickly and begin to explore outside the den at about 2 months old. At five or six months the young are able to care for themselves but the family generally stays together until another litter is born.

Kate Marvel

Alvin Wilson Conservation Demonstration Area, con't.

There were three ponds created, separated only by a cool season grass corridor. All of the ponds are twelve to eighteen inches deep. Starting to the back of the property is Pond Type 1. This type has 40-50% open water and numerous hummock areas, with an irregular shoreline, dead trees, and stumps. Pond Type 2 is next with 50-70% open water, random hummocks and a couple of trees. Pond Type 3 is the first pond that you will see when driving to the demonstration site. This type has 70% or greater open water and one or two hummocks. Each pond was planted in millet and an annual rye. Around the wetland areas and all corridors had lime and fertilizer applied and then were planted with a cool season grass mixture of sheep fescue, chewing fescue, white clover, alsike clover, and oats.

Five grass plots were planted in combinations of both perennial warm and cool season grass. All plots contained a wildflower mix.

Plot 1-Side Oats Grama and Camper Little Bluestem
Plot 2-Camper Little Bluestem and Virginia Wild Rye
Plot 3-Atlantic Coastal Panic Grass and Creeping Red Fescue
Plot 4-Rumsey Indian Grass, Niagara Big Bluestem, and Blackwell Switch Grass
Plot 5-Creeping Red Fescue and Black Switch Grass

There are two cool season grass corridors leading through the grass plots to the pond area. The areas next to the corridors will be planted with annuals in the spring.

The next phase of the demonstration site will take place in the spring of 2004 when trees will be planted on the front section of the property. All trees and grass plantings will represent approved Conservation Reserve Program practices, and will be native to the area.

Wes Conley

Green Eggs and Sand Announces 2004 Workshops

Attention middle and high school teachers and environmental educators! We are now taking registrations for the 2004 round of Green Eggs and Sand Workshops. If you are looking to infuse a global biodiversity and current real-life resource management challenge in your classroom, join educators from Delaware, Maryland, and New Jersey in the spring of 2004 to learn about horseshoe crabs, shorebirds, and the complex human and management issues that surround them. Participants will be instructed in the use of the Green Eggs and Sand curriculum, its lesson plans and video modules, all of which are correlated to National Education Standards in Math, Science, Social Sciences, and Language Arts. Please note that participation at a Green Eggs and Sand workshop is mandatory in order to receive the curriculum.

By attending one of these workshops you will:

1. Learn from the experts! The workshops feature scientists and resource managers presenting the latest research and viewpoints of the management controversy.
2. Join the experts! Take part in the Delaware Bay Horseshoe Crab Spawning Census, dig for eggs, and scan for shorebirds. Bring boots, a flashlight, and binoculars!
3. Become and expert! Receive training from teachers who have developed effective learning modules that are keyed to national standards. Get a wealth of materials to use in your classroom and resources to make these issues come alive for your students.

GES Workshop Participants visit with local waterman

Two workshops will be held this spring. The New Jersey workshop at Belleplain State Forest will be held May 21-23, 2004. The Delaware workshop at the Aquatic Resources Education Center's Mallard Lodge will be held June 3-5, 2004. A $50.00 registration fee is required to cover food and lodging costs. Registration is open until February 1, 2004. Workshops are open to teachers and environmental educators across the United States; you must pay for your own travel to get to the workshop site.

For further information or to obtain a registration form, contact Katy Lamborn at (302) 739-3436 ext. 20 or *katy.lamborn@state.de.us*.

Katy Lamborn

Your Attention Please!

In an effort to 'save some trees,' we are seeking newsletter recipients who would like to receive an electronic copy of the Skimmer instead of a hard copy. Emailing the Skimmer is not only more environmentally responsible but it will help us cut down on printing and mailings costs, allowing us to spend those saved dollars on research and education programming. Our mailing list has grown substantially over the last two years by collecting names at public events, at the St. Jones Reserve Center, and by your inquiries about our programs. If you would like to be added to the DNERR list to receive your Skimmer by way of email, please send a blank email to: *join-dnrec_dnerr@lists.state.de.us*.

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